

1 **CLAIMS**

2 1. In the j-laying of a pipeline from an offshore floating vessel, the method for
3 raising a pipe section from a horizontal position proximate the deck of said floating
4 vessel to alignment with a mast for being connected to the end of the pipeline,
5 comprising

6 providing a main support arm which is pivoted from proximately a horizontal
7 position to a position proximately parallel to said mast,

8 providing a rotational axis mounted on said main support arm,

9 providing grabbers mounted on said rotational axis,

10 engaging said pipe section proximate said deck,

11 rotating said grabbers about the center of said rotational axis from a position below
12 said rotational axis to a second position above said rotational axis,

13 pivoting said main support arm and said pipe section to a position proximately
14 parallel to said mast, and

15 delivering said pipe section to said mast.

16 2. The method of claim 1, further comprising said grabbers are extended to first
17 position to engage said pipe section proximate said deck.

18 3. The method of claim 2, further comprising said grabbers are retracted to a
19 third position closer to said rotational axis than said first position prior to rotating said
20 grabbers about said rotational axis to said second position.

21 4. The method of claim 3, further comprising providing a scissor type
22 mechanism to move said pipe section from said second position to a fourth position for
23 delivery to said mast.

1 5. The invention of claim 4, further comprising the use of force parallel to said
2 rotational axis to extend and retract said scissor mechanism and said grabbers
3 proximately perpendicular to said rotational axis.

4 6. The invention of claim 5, further providing the use of hydraulic cylinders to
5 provide said force to extend and retract said scissor mechanism.

6 7. In the j-laying of a pipeline from an offshore floating vessel, the method for
7 raising a pipe section from a horizontal position proximate the deck of said floating
8 vessel to alignment with a mast for being connected to the end of the pipeline,
9 comprising

10 providing a main support arm which is pivoted from proximately a horizontal
11 position to a position proximately parallel to said mast,

12 providing a rotational axis mounted on said main support arm proximately
13 perpendicular to said rotational axis,

14 providing grabbers mounted on said rotational axis,

15 extending said grabbers to a first position a first distance from said rotational axis
16 to allow said grabbers to engage said pipe section proximate said deck,

17 rotating said grabbers about the center of said rotational axis from a position below
18 said rotational axis to a second position above said rotational axis,

19 pivoting said main support arm and said pipe section to a position proximately
20 parallel to said mast, and

21 delivering said pipe section to said mast.

22 8. The method of claim 7, further comprising the extending said grabbers from
23 said second position to a fourth position for delivery of said pipe section to said mast.

1 9. The method of claim 8, further comprising said grabbers are extended from
2 said second position to said fourth position by a scissors mechanism.

3 10. The invention of claim 9, further comprising the use of force parallel to said
4 rotational axis to extend and retract said scissor mechanism.

5 11. The invention of claim 10, further providing the use of hydraulic cylinders to
6 provide said force to extend and retract said scissor mechanism.

7 12. A method of raising a pipe section from the deck of an floating vessel to a
8 mast for welding onto the end of a pipeline suspended from said floating vessel for
9 deploying said pipe section and the welded pipeline into the water as a pipeline,
10 comprising

11 providing a main support arm with a pivot axis proximate one end of said main
12 support arm,

13 providing a rotational axis along said main support arm proximately perpendicular
14 to said pivot,

15 mounting one or more grabbers on said rotational axis to engage said pipeline
16 section proximate said deck when said grabbers are in a first position,

17 rotating said one or more grabbers to a second position relative to said main
18 support arm,

19 pivoting said main support arm from a generally horizontal angle to a generally
20 vertical angle, and

21 delivering said pipe section to said mast.

22 13. The method of claim 12, further comprising moving said grabbers to a third
23 position closer to said rotational axis prior to rotating said one or more grabbers to said
24 second position.

1 14. The method of claim 13, further comprising providing a scissor type
2 mechanism to move said pipe section from said first position to said third position.

3 15. The method of claim 12, further comprising extending said grabbers to a fourth
4 position further from said rotational axis than said second position while delivering said
5 pipe section to said mast.

6 16. The method of claim 15, further comprising providing a scissor type
7 mechanism to move said pipe section from said second position to said fourth position.

8 17. The invention of claim 16, further comprising the use of force parallel to said
9 rotational axis to extend and retract said scissor mechanism.

10 18. The invention of claim 17, further providing the use of hydraulic cylinders to
11 provide said force to extend and retract said scissor mechanism.

12 19. The method of claim 12, further comprising the interconnecting of said main
13 support arm to the base of said mast.

14 20. The method of claim 12, further comprising said mast is gimbaled relative to
15 said floating vessel.

16 21. The method of claim 20, further comprising gimbaling said interconnection of
17 said main support arm when said mast is gimbaled.

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